

ACES' graduate grantees making international impacts



Alex Park (in orange) with villagers and farmers in Bihar.

Using funds awarded by the Office of International Programs, the recipients of last year's ACES international graduate grants have already made significant contributions towards addressing such global challenges as food security and environmental protection.

The international graduate grant program is made possible through generous donations from Bill and Mary Lee Dimond and the Arlys Conrad Endowment Fund. Updates from selected projects are included below.

Improving crop productivity in Nepal and India

Alex Park, pictured above with local farmers and villagers, used the awarded funds to travel to Bihar and New Delhi, India to study how different technologies have affected measures of productivity of the rural-poor.

Park, also funded under the United States Agency for International Development's Borlaug Fellowship, is advised by Dr. Adam Davis in the Department of Crop Sciences.

Addressing malnutrition in India

Shashank Gaur used the funds to travel to India to work with Mansinhbhai Institute of Dairy and Food Technology and Dudhsagar Dairy where he furthered his team's work to develop a functional lipid-based nutrient supplement (LNS) to alleviate chronic malnutrition, parasitic infections, and gut inflammation among at risk populations in India.

Gaur, a PhD student in Food Science and Human Nutrition, is advised by Dr. Juan Andrade.

Identifying conservation priorities for migratory birds

Antonio Celis Murillo used the funds to conduct a survey of migratory birds at Isla Contoy National Park in the northeastern Yucatan Peninsula in Mexico and in the Guanacahabibes Peninsula in southwestern Cuba.

Murillo is a PhD student in the Department of Natural Resources and Environmental Sciences advised by Dr. Michael Ward.

OIP Announces ACES International Joint Research Grant Awardees

The Office of International Programs (OIP) in the College of ACES with the support of the ACES Office of Research congratulates the most recent awardees of the International Joint Research Program.

This program, in its second year, supports ACES faculty who work jointly with researchers who are based at approved peer institutions abroad and are funded at a matching level by their own institution or another agency.

The researchers/projects/partners listed below were awarded funding in late 2015:

Mary Arends-Kuenning and Kathy Baylis (Agricultural and Consumer Economics) with International Crops Research Center for the Semi-Arid Tropics: "Effect of Conservation Agriculture on Nutritional Outcomes in Southern Africa"

Gustavo Caetano-Anolles (Crop Sciences) with Universidade Federal de Viçosa, Brazil: "Untangling the Diversification of Bacterial and Fungal Plant Pathogens for Improved Agriculture"

Richard Cooke and Maria Chu (Agricultural and Biological Engineering) with Luiz de Queiroz College of Agriculture (ESALQ), Brazil: "Computational Modeling of the Impact of Drainage Design on Crop Yields and Nutrient Losses under Climate Change"

Matthew Stasiewicz (Food Science and Human Nutrition) with the University of Nairobi, Kenya: "Developing Optical Sorting System to Manage Mycotoxin Contamination of Locally Hammer-milled Maize in Eastern Kenya"

Pawan S. Takhar (Food Science and Human Nutrition) with International Rice Research Institute (IRRI), The Philippines: "A Multiscale Approach for Predicting Quality Changes in Rice During Cooking"

Yong-Su Jin and Michael Miller (Food Science and Human Nutrition) with Nanyang Technological University, Singapore: "Impact of Edible Polysaccharide Gels and Capsules Containing SCFAs on Gut Microbiota"

Yuanhui Zhang (Agricultural and Biological Engineering) with China Agricultural University: "Hydrothermal Processing of Human Waste for Water Reuse and Renewable Energy"

Save the Dates: April 7-8, 2016

Second Annual International Food Security at Illinois (IFSI) Symposium: "Using Big Data to Improve International Food Security"

Program and registration information available at: http://go.illinois.edu/big_data_food_security_symposium

Soybean Innovation Lab implements M.S. degree in Crop Improvement in West Africa



The first M.S. cohort in genetics and plant breeding (l to r): Godson Nyawudzo, Prince Buerley Kpentey, Dr. Eric Danquah (WACCI Director), Frederick Justice Awuku, Kassaye Hussien Belay, and Collins Gameli Ghorvi.

The Soybean Innovation Lab (SIL) at the University of Illinois at Urbana-Champaign has partnered with the University of Ghana (UG), Legon, and the West Africa Center for Crop Improvement (WACCI) to establish a high-caliber Master of Science degree program in Genetics and Plant Breeding.

“Training Africa’s next generation of plant breeders is imperative to improve the continent’s crop yields

and crop nutrition towards the ultimate goal of food security,” said Dr. Rita Mumm, who led the effort to establish the new master’s degree program together with Prof. Eric Danquah, Director of WACCI, and Prof. Christiana Amoatey, Head of the Crop Science Department at UG.

Mumm, a professor emerita of crop sciences at the University of Illinois, serves as Education and Training Lead for SIL, a five-year program to establish sustainable production and utilization of the soybean in Africa funded by the United States Agency for International Development (USAID).

Through its International Seed Grant Program, the Office of International Programs helped fund Dr. Mumm’s travel to Ghana and related supplies during 2015. The new M.S. program complements WACCI’s existing Ph.D. program in Plant Breeding.

“This Master’s degree program is for African students in Africa,” said Pete Goldsmith, principal investigator for SIL. “Traditionally many Africans have pursued degrees in the USA or Europe but have not returned home to practice their profession. Also, it is important to fill the gap at the Masters or technical level because there were not enough well-trained people managing the research plots at the research stations. The existing Ph.D. degree was essentially a teaching degree because not much research was going on,” he said.

The first five M.S. students were seated during fall 2015. This cohort includes four students from Ghana and one student from Ethiopia. The core courses include statistics, experimental design, population genetics, molecular genetics, and genomic applications to crop improvement. Though based out of Ghana, the program includes a summer mentoring and internship program in the U.S. where there students will visit participating universities and work with the private sector, particularly the U.S. seed industry.

For more information, visit www.soybeaninnovationlab.illinois.edu or @TropicalSoyLab on Twitter.

For more news items on international activities in the College of ACES, visit <http://intlprograms.aces.edu>.

To receive an electronic version of this newsletter, visit <http://illinois.edu/gm/subscribe/7045>

Livestock donations to Zambian households yield higher income, improved diet

Some humanitarian organizations facilitate livestock donations to poor households in developing countries, but does giving a cow, a pair of oxen, or a herd of goats to a poor household really benefit the recipients? A recent University of Illinois study says it does.

“Our findings show that livestock transfers significantly increase peoples’ incomes. We saw a large, rapid, sustained increase in consumption expenditures,” says Alex Winter-Nelson, agricultural economist and director of the Office of International Programs in the College of ACES.

“For poor households in Zambia, it means spending \$1.25 per day rather than just \$1 per day. That’s enough to change the quality of what they are able to consume,” Winter-Nelson says. “Their household budget increases about 25 percent, which is a remarkable boost in income.”

“Milk in the Data: Food Security Impacts from a Livestock Field Experiment in Zambia” appears in *World Development*. Authors are U of I graduate now at Cornell University Margaret Jodlowski, and Alex Winter-Nelson, Kathy Baylis, and Peter Goldsmith, all from the University of Illinois.

National politics shape the impacts of park law enforcement

Conservation efforts are designed to restrict activities in protected areas, but the restrictions can have unintended consequences. A University of Illinois researcher examined the results of a multi-million dollar European Union aid project in West Africa and found that a country’s national governance quality can affect the livelihoods of families who rely on resources from national parks and other protected areas.

U of I’s Daniel Miller, who studies environmental politics and policy, was intrigued by a conservation intervention that took place from 2001 to 2008 in the W National Park region in Africa. The purpose of the project was to help reverse natural resource degradation and conserve biodiversity so as to benefit local people.

Miller conducted interviews from 2010 to 2011 with 300 households in villages adjacent to the W National Park in Benin and Niger. He used the original data from the interviews to explain how and why the same conservation project led to different outcomes in the two national political contexts.

The research paper, “The importance of national political context to the impacts of international conservation aid: Evidence from the W National Parks of Benin and Niger,” was written by Daniel Miller, Michael Minn, and Brice Sinsin. It is published in *Environmental Research Letters*.